UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R048AY008NM

Site Name: Mountain Brush

Precipitation or Climate Zone: 15 to 30 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site is located on steep to very steep sides of basalt-capped mesas and escarpments of sandstone, basalt, shale and limestone. The site is formed on the upland leading away from vertical basalt escarpments and basalt-capped mesas. They are formed from a variety of materials derived from sandstone, basalt, shale and limestone. Rock outcrop is common and may occupy from 15 percent to 50 percent of the area. Slopes range from 20 to 75 percent. The exposure is mainly to the east, south and west. However, this site may occur on the drier north-facing slopes. North and east-facing slopes are generally more productive and tend to grow more woody vegetation. Elevation ranges from 6,500 to 9,000 feet above sea level.

Land Form:

1. Scarp slope
2.
3.

Aspect:

1. East
2. South
3. West

	Minimum	Maximum
Elevation (feet)	6,500	9,000
Slope (percent)	20	75
Water Table Depth (inches)	N/A	N/A

Flooding:	**Minimum**	**Maximum**
Frequency	N/A	N/A
Duration	N/A	N/A

Ponding:	**Minimum**	**Maximum**
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Medium to very high.

CLIMATIC FEATURES

Narrative:

Climate conditions for this site are typical of the lower elevational limits of the Rocky Mountains. Average annual precipitation ranges from 16 to 22 inches. Most of the precipitation received is in the form of rain from heavy thunderstorms during the hottest summer months. Winter and spring moisture is an important facet of this site and determines production of the cool-season species. Summer moisture received during the principal growing season of July, August and September determines the production of the principal warm-season grasses. Summer precipitation accounts for approximately 60 percent of the total annual precipitation, although at a moderately high elevation, the climatic features of this site are not too unlike sites at lower elevations in that precipitation amounts fluctuate greatly from year to year. Annual amounts commonly range from 8 to 35 inches. Spring precipitation in the latter part of March may be sufficient in some years to contribute greatly to the production of both warm and cool-season forage plants.

Air temperatures vary from a monthly mean of 29 degrees F in January to 69 degrees F in July. Daily high temperatures average in the 80's during the summer. Winter low temperatures fall below the freezing mark much of the time from mid-September through April. Date of the last killing frost is approximately May 15th. The first killing frost is approximately October 3rd. The dates of the last killing frost and the first killing frost vary from lower elevations to the higher elevation points.

The frost-free season ranges from 90 to 140 days, from mid-May through early October. The frost-free period is important only in the limiting of the production of the warm-season species that are present on the site.

Mountain winds are an important part of the climatic complex of this site, because of their indirect effect on soil and moisture and translocation of seed.

Climate data was obtained from http://www.wrcc.sage.dri.edu/summary/climsmnm.html web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	103	144
Freeze-free period (days):	127	169
Mean annual precipitation (inches):	15	30

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.32	.88	14.2	46.8
February	.33	1.13	16.7	50.0
March	.62	1.79	20.4	55.7
April	.81	1.71	25.6	63.6
May	1.12	2.00	33.3	72.7
June	1.26	2.27	40.6	82.4
July	2.68	4.24	44.9	84.9
August	2.87	4.48	44.0	81.8
September	1.63	1.92	38.1	76.8
October	1.05	1.64	29.2	67.7
November	.56	1.15	20.3	55.6
December	.41	1.06	14.5	48.7

Climate Stations:

				Period		
Station ID	291813	Location	Cimarron 4SW, NM	From: 5/1/1904	To:	12/31/01
Station ID	293488	Location	Gascon, NM	From: 11/18/53	To:	12/31/01
Station ID	296275	Location	Ocate 1N, NM	From: 08/01/60	To:	12/31/01
Station ID	296676	Location	Pecos Ranger Station, NM	From: 01/01/16	To:	12/31/01

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from a wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

The soils on this site are shallow to deep, well drained over sandstone, shale, basalt and limestone. Rock outcrops are common and occupy the nearly vertical basalt escarpments, ridges and benches of exposed sandstone, limestone and shale. Rubbleland occurs at the base of the basalt escarpments. The surface textures are gravelly loam and the subsoils are cobbly clay loam and cobbly loam. The have moderate to slow permeability. The available water-holding capacity is medium to high. The surface runoff is medium too rapid and the erosion hazard is severe. Effective rooting depth is from 12 to 40 inches.

Parent Material Kind: Colluvium
Parent Material Origin: Mixed

Surface Texture:

1. Clay loam
2. Very channery clay loam
3. Channery loam
4. Gravelly loam

Surface Texture Modifier:

1. Gravel
2. Channery
3.

Subsurface Texture Group: Loamy
Surface Fragments <=3" (% Cover): 15 to 35
Surface Fragments >3" (% Cover): 15 to 35

Subsurface Fragments <=3" (%Volume): 35 to 60
Subsurface Fragments >=3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Impermeable	Slow
Depth (inches):	<10	>72
Electrical Conductivity (mmhos/cm):	0.00	4.00
Sodium Absorption Ratio:	0.00	5.00
Soil Reaction (1:1 Water):	6.6	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	6	12
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label**: HCPC

Plant Community Narrative: Historic Climax Plant Community
This site is a browse/grass plant community. Woody species give this site the appearance of a shrubland community. However, grasses comprise approximately 50 percent of the annual yield. Cool-season mid-grasses and bunch grasses dominate the grass production. The main browse plants are Gambel oak, mountainmahogany and snowberry. Woody species occupy approximately 40 percent of the total annual production. Perennial and annual forbs occupy a minor portion of the plant community and make up approximately 10 percent of the total annual production. This site may have scattered ponderosa pine, pinyon pine and juniper species throughout the site. Tree overstory canopy occupies less than 5 percent.

Canopy Cover:	
Trees	<5 %
Shrubs and half shrubs	25 %
Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	15
Bare ground	15
Surface gravel	5
Surface cobble and stone	30
Litter (percent)	10
Litter (average depth in cm.)	5

Plant Community Annual Production (by plant type):

Annual Production (lbs/ac)

Plant Type	Low	RV	High
Grass/Grasslike	250	450	600
Forb	50	90	120
Tree/Shrub/Vine	200	360	480
Lichen			
Moss			
Microbiotic Crusts			
Total	500	900	1,200

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	MUMO	Mountain Muhly	72 – 90	72 – 90
2	FEAR	Arizona Fescue	72 – 90	72 – 90
3	PASM	Western Wheatgrass	72 – 90	72 – 90
4	KOMA POFE	Prairie Junegrass Muttongrass	72 - 90	72 – 90
5	BOGR2	Blue Grama	27 – 45	27 – 45
6	SCSC	Little Bluestem	27 – 45	27 – 45
7	ANGE	Big Bluestem	27 – 45	27 – 45
8	ELEL5	Bottlebrush Squirreltail	27 – 45	27 – 45
9	ACHY	Indian Ricegrass	27 – 45	27 – 45
10	CAREX 2GRAM	Sedge spp. Other Grasses	27 – 45	27 – 45

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	PENST SPHAE ERIOG CACO17	Penstemon spp. Globemallow spp. Buckwheat spp. Indian Paintbrush	27 – 45	27 – 45
12	2FP	Other Perennial Forbs	27 – 45	27 – 45
13	2FA	Other Annual Forbs	27 – 45	27 – 45

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
14	QUGA	Gambel Oak	108 – 135	108 – 135
15	CEMOP	Hairy Mountainmahogany	72 – 90	72 – 90
16	SYAL AMUT	Snowberry Serviceberry	72 – 90	72 – 90
17	PUTR2 ERICA	Antelope Bitterbrush Rabbitbrush spp.	27 – 45	27 – 45
18	ARTEM	Sagebrush spp.	27 – 45	27 – 45
19	PIED JUNIP	Pinyon Pine Juniper spp.	27 – 45	27 – 45
20	2SD	Other Shrubs	27 – 45	27 – 45

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other species that could appear include: pine dropseed, nodding brome, ring muhly, sideoats grama, threeawn spp., broom snakeweed, cinquefoil and winterfat.

Plant Growth Curves

Growth Curve ID **3108NM**

Growth Curve Name: **HCPC**

Growth Curve Description: **Mixed browse/grassland with a minor component of forbs.**

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	3	5	10	10	25	30	12	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitats, which support a resident animal community that is characterized by mule deer, bobcat, mountain cottontail, rock squirrel, western harvest mouse, bush-tailed woodrat, rufous-sided towhee, common raven and scrubjay. There is seasonal use by elk and band-tailed pigeon.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrologic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series	Hydrologic Group
Horselake	D
Krakon	D
Quimera	C
Suposo	C
Vamer	B
Yankee	D

Recreational Uses:

This site provides limited recreation potential due to the steep slopes and stoniness of the soil surface. Hunting for mule deer is fair to good and hunting for small rabbits and turkeys is poor to fair.

Wood Products:

Production of pinyon pine and juniper provides a limited amount of firewood and fence posts.

Other Products:

Grazing:

This site can be grazed during the spring, summer and fall by livestock. Because of the slopes and rock outcrops, a younger class of livestock utilizes this site best. Browsing animals are favored because of the site's potential to produce shrubs and forbs. A large variety of grasses, forbs and shrubs provide a well-balanced feed and good nutrition to all grazing and browsing animals. Distribution of domestic livestock is a problem on this site due to the steep slopes and rock outcrops. Cattle, horses and sheep tend to graze the flatter slopes, leaving the steeper slopes under grazed. Some of the steeper slopes are not suitable for grazing by domestic livestock because of the high erosion hazard of the soils. Continuous grazing during the growing season will cause the potential plant community to deteriorate. Most of the dominant grasses will decrease as ecological condition declines. Species most likely to invade under these conditions are ring muhly, pingue and sleepygrass. Species most likely to increase as the ecological condition declines are Gambel oak, threeawn spp., broom snakeweed and juniper spp. Under a deteriorated plant community, oak brush may completely dominate the plant community. A system of deferred grazing, which varies the time and season of grazing and rest in a pasture in successive years, is needed to maintain or to improve a healthy, well-balanced plant community. Rest during the late spring is needed for the cool-season species such as Arizona fescue, western wheatgrass, prairie junegrass and muttongrass to maintain its vigor and reproduction.

Other Information:

Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month

Similarity Index	Ac/AUM
100 - 76	4.3 – 7.3
75 – 51	5.7 – 11.0
50 – 26	8.9 – 17.0
25 – 0	17.0+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock
Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Muhly	Muhlenbergia montana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Muttongrass	Poa fendleriana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Big Bluestem	Andropogon gerardii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sedge	Carex spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Penstemon	Penstemon spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Globemallow	Sphaeralcea spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Livestock
Animal Type: Horse

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Muhly	Muhlenbergia montana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Muttongrass	Poa fendleriana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Big Bluestem	Andropogon gerardii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sedge	Carex spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Penstemon	Penstemon spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Globemallow	Sphaeralcea spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Livestock
Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Prairie Junegrass	Koeleria macrantha	EP	U	U	D	D	D	U	U	U	U	U	U	U
Western Wheatgrass	Pascopyrum smithii	EP	U	U	D	D	D	D	D	D	D	D	D	U
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	D	D	D	D	D	D	D	P
Sedge	Carex spp.	EP	U	U	D	D	D	U	U	U	U	U	U	U
Muttongrass	Poa fendleriana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Penstemon	Penstemon spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Buckwheat	Eriogonum spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Globemallow	Sphaeralcea spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U
Indian Paintbrush	Castilleja coccinea	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Wildlife
Animal Type: Elk

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Mountain Muhly	Muhlenbergia montana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Prairie Junegrass	Koeleria macrantha	EP	D	D	D	D	D	D	D	D	D	D	D	D
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
Western Wheatgrass	Pascopyrum smithii	EP	D	D	P	P	P	D	D	D	D	D	D	D
Muttongrass	Poa fendleriana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Big Bluestem	Andropogon gerardii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Indian Ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sedge	Carex spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Penstemon	Penstemon spp.	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Globemallow	Sphaeralcea spp.	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Wildlife
Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Big Sagebrush	Artemisia tridentata	L/S	D	D	D	D	D	D	D	D	D	D	D	D
Hairy Mountainmahogany	Cercocarpus montanus	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Oak	Quercus spp.	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: **New Mexico**

County: **Colfax, Mora, Rio Arriba, Sandoval, San Miguel, Santa Fe, Taos**

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? **Yes** ☐ **No** ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Rocky Mountains 48 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Colfax, Taos, Mora, San Miguel, and Santa Fe.

Characteristic Soils Are:	
Horselake	Krakon
Quimera	Suposo
Vamer	Yankee
Other Soils included are:	

Site Description Approval:

Author	Date	Approval	Date
Don Sylvester	09/01/78	Don Sylvester	09/01/78

Site Description Revision:

Author	Date	Approval	Date
Elizabeth Wright	09/30/02	George Chavez	2/12/03